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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/598,592

03/05/2007

Juan de la Cierva Hoces

F534

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7590

04/01/2010

COLLEN IP  
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EXAMINER

GREEN, RICHARD R

ART UNIT

PAPER NUMBER

3644

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/598,592	<b>Applicant(s)</b> DE LA CIERVA HOCES, JUAN	
	<b>Examiner</b> Richard R. Green	<b>Art Unit</b> 3644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 09 December 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,6,7 and 15-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,6,7 and 15-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 December 2009 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/9/2009 has been entered.

### ***Drawings***

The drawings were received on 12/9/2009. These drawings are acceptable. Support for new figure 8 appears to be found on page 11, lines 22-25, of the original specification.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims **1, 6, 7 and 15-20** are rejected under 35 U.S.C. 103(a) as obvious over U.S. Patent 5,085,315 to Sambell in view of U.S. Patent 3,582,021 to Pender.

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Regarding claims **1, 7 and 20**, Sambell teaches in figs. 1 and 2 a convertible aircraft 10 with a fuselage 11, fixed wings 12 and 14 with ailerons (shown in figures), a tail 16 with rudders (shown in the figures), propulsion engines 18 and 20, rotors 32 and 34 with blades, a transmission between the engines and the rotor equipped with a clutch (col. 3, lines 8-17: power from engines 18 and 20, which are not coaxial with the rotors, may be selectively connected to power the rotors, which is an implicit teaching of a transmission having a clutch) and landing gear (it is strongly believed that the aircraft 10 comprises conventional landing gear, though since at least landing is taught in col. 1, lines 50-53, if the aircraft has no conventional landing gear, then the aircraft must land by impact of the bottom of the fuselage upon land or water, whereby the bottom of the fuselage is the landing gear), the aircraft converting from helicopter to autogyro to aeroplane using the following steps:

declutching the rotor from the engine (col. 4, lines 36-38);

adjusting the collective and cyclic pitches of the blades to essentially zero degrees, such that they cease to lift and control the aircraft (fig. 16, at point G; col. 5, lines 19-24 teach at least setting the collective pitch to zero; col. 3, lines 44-46 teach that the cyclic pitch is set to zero at some point during the flight of the aircraft);

quickly reducing the rotational velocity of the rotor using a brake (col. 4, lines 39-55 teach how the rotational velocity of the blades is reduced and halted, this mechanism acting as a brake);

stopping the rotor in a transverse position of at least two of its blades, in a position essentially transverse to a direction of flight (the position of the blades in fig. 8

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is transverse to the direction of flight of fig. 3, which was the direction of flight immediately prior to the stopping of the blades; alternatively, the flats of the blades are oriented transverse to the direction of flight);

retracting the blades towards the stern of the aircraft, independently from one another (the individual blades of the rotor assembly 32 retract independently to the stern in figs. 6-8);

rotating at least one of the blades to approximately 180 degrees on its pitch axis (col. 4, lines 25-28);

deploying the blades independently from one another to an azimuthal position determed by a pre-determined range of angles (fig. 1 or 8: the azimuthal position is directly aft);

adjusting the angle of attack of the deployed blades in such a way that they are placed on the aircraft's standard fixed wings (figs. 13-15 show the reverse process of how the blades are adjusted and fitted in a fixed relationship to the aircraft's fixed wings, the final position shown in fig. 1);

wherein the reverse transition is accomplished in reverse order (col. 4, lines 16-18 and 60-63; it is clear that the reverse transition occurs similarly, but in reverse order);

particular to claim 7, col. 5, lines 59-63 teach that electromechanical devices may be used in the control movements of the blades, And col. 7, lines 36-44 teach that an electric or hydraulic actuator may be used to control retraction and deployment of the blades. This actuator is capable of positioning the blades essentially perpendicular to the plane of the wings (as seen in fig. 6).

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Pender teaches a convertiplane having landing gear (fig. 2, at 20) and a brake (col. 3, lines 23-24). It would have been obvious to a person having ordinary skill in the art at the time of the invention to provide the aircraft of Sambell with landing gear as taught by Pender for the purpose of landing safely, and to provide the transmission of Sambell with a brake as taught by Myers for the purpose of further controlling the braking of the rotors.

It is believed that the rotors of Sambell may be considered as being located on the fuselage, by virtue of being located on the wings, which are located on the fuselage. However, if this is not so, Pender teaches a convertible aircraft having a single rotor on the fuselage which converts similarly to that of Sambell (Pender figs. 1-6). It would have been obvious to a person having ordinary skill in the art at the time of the invention to replace the outboard rotors of Sambell with one—still of Sambell—located centrally, as taught by Pender, to reduce the wingspan of the aircraft in the helicopter mode and reduce the corresponding helipad footprint.

Regarding claim **6**, the blades when placed on the fixed wings as in fig. 1 and 8, are arranged such that the planes of the blades are substantially parallel to the plane of the wings.

Regarding claim **15**, Sambell is silent on having the rotors thicker at the root than at the tips, however it is known to taper rotor blades, and it would have been obvious to a person of ordinary skill in the art at the time of the invention to taper the rotor blades of Sambell to concentrate the density of the rotating mass near the center of mass.

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Regarding claim **16**, Sambell teaches engines with propellers 32, 34 (col. 3, lines 8-17 teach that the rotors have engines; rotors are propellers).

Regarding claim **17**, the propellers 32, 34 are placed astern of the fixed wings, in figs 1 and 8.

Regarding claim **18**, the propellers 32, 34 have variable pitch (col. 4, lines 28-65 teach operations whereby the pitch of the blades is changed).

Regarding claim **19**, the engines are jet engines (col. 3, lines 1-3).

### ***Response to Arguments***

Applicant's arguments with respect to claims 1, 6, 7 and 15-20 have been considered but are moot in view of the new ground(s) of rejection. It is believed that the new grounds of rejection address the new limitations in the claims.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard R. Green whose telephone number is (571)270-5380. The examiner can normally be reached on Monday - Thursday 8:00 am - 6:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Mansen can be reached on (571)272-6608. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/R. R. G./  
Examiner, Art Unit 3644

/Tien Dinh/  
Primary Examiner, Art Unit 3644